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EXAMINER
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PLUMMER, ELIZABETH A

ART UNIT	PAPER NUMBER
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3635

NOTIFICATION DATE	DELIVERY MODE
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03/07/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

aopatent@fulbright.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,381	<b>Applicant(s)</b> TREMBLAY ET AL.	
	<b>Examiner</b> ELIZABETH A. PLUMMER	<b>Art Unit</b> 3635	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18, 19, 21-26, and 31-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

Applicant's amendments and arguments received 08 December 2010 have been entered and considered. An examination of pending claims 1-35 is herein presented.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 6-8, 12-15, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo (US Patent 4,662,133).

a. Regarding claim 1, Kondo discloses a brace apparatus (Fig. 1) to be mounted between two portions of a structure (12,14) subjected to a loading force to limit movements due to the loading force, said brace apparatus comprising: a fixed portion (62) having a first end (left side) to be mounted to a portion of the structure; said first end (left side) of the fixed portion (62) defining a first fixed portion abutting surface, said fixed portion (62) having a second end (right side) defining a second fixed portion abutting surface; a movable portion (42,44) having a first end to be mounted to a portion of the structure; said first end of said movable portion (42,44) defining a first movable portion abutting surface (48) and

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a second end (48) defining a second moveable portion abutting surface; a tensionable assembly (54,56) mounting said movable portion (42,44) to said fixed portion (62) so that a) said first movable portion abutting surface (48) is in proximity of the second fixed portion abutting surface, and b) said first fixed portion abutting surface (on 62) is in proximity of the second movable portion abutting surface (48); said tensionable assembly including a first abutting element (left 52,82) in the proximity of the first end of the fixed portion (62) and a second abutting element (right 52,82) in the proximity of the first end of the movable portion; said first and second abutting elements being interconnected by an adjustable tensioning element (54) wherein, i) when a loading force moves the movable portion away from the fixed portion, said first abutting element abuts the first fixed portion abutting surface and said second abutting element abuts the first movable portion abutting surface to thereby limit the movement of the movable portion away from the fixed portion (Fig. 7) and ii) when a loading force moves the movable portion towards the fixed portion, said first abutting element abuts the second movable portion abutting surface and said second abutting element abuts the second fixed portion abutting surface to thereby limit the movement of the movable portion towards the fixed portion (column 3, lines 1-23).

b. Regarding claim 2, wherein said tensioning element (54) is pre-tensioned (column 5, lines 41-53; column 7, lines 15-18).

- c. Regarding claim 6, wherein said tensioning element is a longitudinally extending threaded member attached to said first and said second abutting elements via nuts (56) (Fig. 4).
- d. Regarding claim 7, said tensioning element can be a tendon fixedly mounted to said first and second abutting elements (Fig. 8).
- e. Regarding claim 8, said tensioning element includes more than one tensioning elements which are symmetrically positioned with respect to said first and second abutting elements (Fig. 2,4,8).
- f. Regarding claim 12, said fixed portions includes two fixed portions positioned on each side of said movable portion (Fig. 1,2).
- g. Regarding claim 13, wherein said brace apparatus further includes guiding elements (40) securely mounted to said first abutting element and said second abutting element, said guiding elements being provided in proximity of said second end of said moveable portion and said second end of said fixed portions for providing guidance upon relative movement of said moveable portion and said fixed portions (Fig. 1,2,4).
- h. Regarding claim 14, said tensioning element (54) is located within said movable portion (Fig. 1,2,3).
- i. Regarding claim 15, said apparatus further includes an energy dissipation system linking said fixed portion to said movable portion, said energy dissipation system being operable upon relative movement between said fixed portion and said movable portion for dissipating energy (84,50).

j. Regarding claim 33, said apparatus further includes guiding elements (40) provided between said fixed portion and said movable portion for guiding a relative movement between said fixed portion and said movable portion.

k. Regarding claim 34, said guiding elements include absorbing elements (50) mounted between said fixed portion and said moveable portion for mitigating impact when said moveable portion is relatively moving with respect to said fixed portion (Fig. 4).

l. Regarding claim 35, Kondo discloses a brace apparatus mountable between two portions of a structure (12,14) subjected to a loading force, said brace apparatus comprising: a) a first bracing member (62,62) having a first end mountable to one of the two portions and a second end, each having an abutting surface; b) a second bracing member (42,44) having a third end and a fourth end mountable to another one of the two portions and each having an abutting surface, said first and second bracing members being movably operatable between a rest position and a transitional position such that: i. said first end is in proximity of said third end so as to define a first proximity end pair and said second end is in proximity of said fourth end so as to define a second proximity end pair (Fig. 1,2,3,); said first end is opposed to said fourth end so as to define a first opposed end pair and said second end is opposed to said third end so as to define a second opposed end pair (Fig. 1,2,3); c) a tensionable assembly (54,56) including abutting elements (52,82) in the proximity of said first and second proximity end pairs, said abutting elements being interconnected by

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a tensioning element (54); whereby said first and second bracing members are movable apart when the loading force applied to said first opposed end pairs i) tensions said apparatus such that respective abutting surfaces of said first opposed end pair abuts on respective abutting elements; ii) compresses said apparatus such that respective abutting surfaces of said second opposed end pair abuts on respective abutting elements; said tensioning element being tensionable under the loading force such as to alternatively move said first and second bracing members from said rest position to said transitional position (column 3, lines 1-15; column 3, lines 53-63).

3. Claims 1, 9-11, 15, 16, 18, 19, 21-24, 31, and 35 are rejected under 35

U.S.C. 102(b) as being anticipated by Fyfe et al. (US Patent 4,605,106).

a. Regarding claim 1, Fyfe et al. discloses a brace apparatus (Fig. 1) to be mounted between two portions of a structure (Fig. 3) subjected to a loading force to limit movements due to the loading force, said brace apparatus comprising: a fixed portion (1) having a first end to be mounted to a portion of the structure; said first end of said fixed portion defining a first fixed portion abutting surface (at 6) and a second end defining a second fixed portion abutting surface (at opposite end);

a movable portion (3) having a first end to be mounted to a portion of the structure; said first end of said movable portion defining a first moveable portion abutting surface (at 5) and a second end defining a second moveable portion abutting surface (at opposite end); a tensionable assembly (7,9,11) mounting

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said movable portion to said fixed portion so that a) said first movable portion abutting surface is in proximity of the second fixed portion abutting surface (Fig. 1), and b) said first fixed portion abutting surface is in proximity of the second movable portion abutting surface (Fig. 1); said tensionable assembly including a first abutting element (9,11) in the proximity of the first end of the fixed portion and a second abutting element (9,11) in the proximity of the first end of the movable portion (Fig. 1); said first and second abutting elements being interconnected by an adjustable tensioning element (7) wherein i) when a loading force moves the movable portion away from the fixed portion, said first abutting element abuts the first fixed portion abutting surface and said second abutting element abuts the first movable element abutting surface to thereby limit the movement of the movable portion away from the fixed portion and ii) when a loading force moves the movable portion towards the fixed portion, said first abutting element abuts the second movable portion abutting surface and said second abutting element abuts the second fixed element abutting surface to thereby limit the movement of the movable portion towards the fixed portion (Fig. 1).

b. Regarding claim 9, said fixed portion and said moveable portion have tubular bodies and said moveable portion is located inside said fixed portion (Fig. 1).

c. Regarding claim 10, said movable portion is concentric with said fixed portion (Fig. 1).



- d. Regarding claim 11, said tensioning element is located within said fixed portion (Fig. 1).
- e. Regarding claim 15, said apparatus further includes an energy dissipation system linking said fixed portion to said movable portion, said energy dissipation system being operable upon a relative movement between said fixed portion and said movable portion for dissipating energy (column 3, lines 35-46).
- f. Regarding claim 16, said energy dissipation system includes a friction mechanism including a support member (15,17; 23) securely mounted to said fixed portion (Fig. 1), and an extending member (11,31) securely mounted to said moveable portion and extending to said support member such as to be in a frictional contact with said moveable portion.
- g. Regarding claim 18, said friction mechanism further includes a friction interface (49,41) located between said support member and said extending member, said friction interface being so configured and sized as to provide friction upon said relative movement between said fixed portion and said moveable portion.
- h. Regarding 19, said friction mechanism includes two fiction mechanisms including a first friction mechanism being located near said first end of said fixed portion and a second friction mechanism being located near said first end of said movable portion (Fig. 2).
- i. Regarding claim 21, said energy dissipation system includes a yielding mechanism including metallic elements (15) mounted to said fixed portion and

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said moveable portion, said metallic elements being so configured and sized as to be capable of yielding under deformations generated from a relative movement between said fixed portion and said moveable portion.

j. Regarding claim 22, wherein said energy dissipation system includes a viscous mechanism including viscous fluids (19) contained within a device mounted to said fixed portion and said moveable portion and which deforms upon a relative movement between said fixed portion and said moveable portion.

k. Regarding claim 23, said energy dissipation system includes a visco-elastic mechanism including a visco-elastic material (13) mounted to said fixed portion and said moveable portion which deforms upon a relative movement between said fixed portion and said moveable portion.

l. Regarding claim 24, wherein said energy dissipation system includes a dissipation mechanism of a viscous mechanism (19) and a visco-elastic mechanism (13) exhibiting a flag shaped hysteresis behavior of said brace apparatus when subjected to the loading force.

m. Regarding claim 31, said first end of said fixed portion is slidably mounted to said first abutting element and said first end of said mobile portion is slidably mounted to said second abutting element (Fig. 1).

n. Regarding claim 35, Fyfe et al. discloses a brace apparatus mountable between two portions of a structure (Fig. 3) subjected to a loading force, said brace apparatus comprising: a) a first bracing member (1) having a first end mountable to one of the two portions and a second end, each having an abutting

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surface; b) a second bracing member (3) having a third end and a fourth end mountable to another one of the two portions and each having an abutting surface, said first and second bracing members being movably operatable between a rest position and a transitional position such that: i. said first end is in proximity of said third end so as to define a first proximity end pair and said second end is in proximity of said fourth end so as to define a second proximity end pair (Fig. 1,2,3,); said first end is opposed to said fourth end so as to define a first opposed end pair and said second end is opposed to said third end so as to define a second opposed end pair (Fig. 1,2,3); c) a tensionable assembly (7,11,9) including abutting elements in the proximity of said first and second proximity end pairs, said abutting elements being interconnected by a tensioning element; whereby said first and second bracing members are movable apart when the loading force applied to said first opposed end pairs i) tensions said apparatus such that respective abutting surfaces of said first opposed end pair abuts on respective abutting elements; ii) compresses said apparatus such that respective abutting surfaces of said second opposed end pair abuts on respective abutting elements; said tensioning element being tensionable under the loading force such as to alternatively move said first and second bracing members from said rest position to said transitional position (Fig. 1,2,3).

4. Claims 1, 25 and 26 rejected under 35 U.S.C. 102(e) as being anticipated by Sridhara (US Patent 7,188,452).

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a. Regarding claim 1, Sridhara disclose discloses a brace apparatus (Fig. 15a) to be mounted between two portions of a structure subjected to a loading force to limit movements due to the loading force, said brace apparatus comprising: a fixed portion (53,53) having a first end to be mounted to a portion of the structure; said first end defining a first abutting surface (Fig. 15a) and a second end defining a second abutting surface (at opposite end); a movable portion (51) having a first end to be mounted to a portion of the structure; said first end defining a first abutting surface (at 5) and a second end defining a second abutting surface (at opposite end); a tensionable assembly (157) mounting said movable portion to said fixed portion so that a) said first movable portion abutting surface is in proximity of the second fixed portion abutting surface (Fig. 15a), and b) said first fixed portion abutting surface is in proximity of the second movable portion abutting surface (Fig. 15a); said tensionable assembly including a first abutting element in the proximity of the first end of the fixed portion and a second abutting element in the proximity of the first end of the movable portion (Fig. 15a); said first and second abutting elements being interconnected by an adjustable tensioning element (157) wherein, i) when a loading force moves the movable portion away from the fixed portion, said first abutting element abuts the first fixed portion abutting surface and said second abutting element abuts the first movable element abutting surface to thereby limit the movement of the movable portion away from the fixed portion and ii) when a loading force moves the movable portion towards the fixed portion, said first

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abutting element abuts the second movable portion abutting surface and said second abutting element abuts the second fixed element abutting surface to thereby limit the movement of the movable portion towards the fixed portion (Fig. 15a).

b. Regarding claim 25, said apparatus (58') further includes an end connection protruding from at least one of said first ends and a fuse system including a slipping element (Fig. 11b) mounted to said end connection and mounted to one of the two portions of the structure (Fig. 10a), said fuse system being so configured and sized as to be capable of slip with respect to said end connection at a predetermined slip load which is higher than the loading force.

c. Regarding claim 26, said slipping member is mounted in a frictional cooperation to said end connection via fasteners engaged within slots in said end connection for providing an under friction slip movement between said brace apparatus and the structure (Fig. 15a).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Kondo (US Patent 4,662,133).

- a. Regarding claim 3, Kondo discloses the tensioning element is pre-tensioned at a pre-tension level that can be readily adjusted. While Kondo does not disclose that the level ranges from 60% of a maximum allowed deformation of said tensioning element to a value corresponding to no pre-tension, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a structure within the claimed range, as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.
  - b. Regarding claim 4, said movable portion moves with respect to said fixed portion when the loading force overcomes said pre-tension level (column 7, lines 1-59).
  - c. Regarding claim 5, said tensioning element elongates when the loading force overcomes said pre-tension level such that an additional tension force builds in said tensioning element as said apparatus is moved from a rest position to a transitional position, said additional tension force being able to restore said apparatus back to said rest position when the loading force ceases (column 3, lines 60-63).
7. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fyfe et al. (US Patent 4,605,106) in view of Kuroda et al. (US Patent 6,230,450).
- Regarding claim 32, Fyfe et al. discloses the invention as claimed except for wherein said first end of said fixed portion and said first end of said mobile

portion include threaded end connections for mounting said brace apparatus to the two portions of the structure. However, it is well known in the art that a brace mechanism can comprise a threaded end connection for mounting. For example, Kuroda et al. teaches a brace apparatus comprising a fixed and moveable portion (Fig. 1,2) wherein the first end of the fixed portion comprises a threaded ended connection for mounting to a structure (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fyfe et al. to use threaded end connections, such as taught by Kuroda et al., as it would allow Fyfe et al. to be used between a wider variety of structures and provide for an easier way of mounting.

***Allowable Subject Matter***

8. Claims 17, 20 and 27-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if also rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments filed 08 December 2010 have been fully considered but they are not persuasive. Concerning the rejections under 35 USC 112, all of the errors appear to have been corrected and now clearly define the subject matter of the present application. Regarding applicant's arguments concerning Kondo, applicant first argues that none of the sliding members 42 or 44 is fixed. This is true. However, sliding

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members 42 and 44 are analogous to applicant's movable portion. The fixed portion as cited in the rejection are members 62. The fixed portion (62) and the movable portion (42,44) are mounted together by the tensionable assembly. The tensionable assembly is not limited to merely the spring (54), but the assembly includes other adjacent parts, such as the fastening nuts (58), the flange that it is connected to (52), any additional dampers (84), supporting bars (82), etc. Applicant argues that there is no abutting element in the spring, but the abutting element can be found in the other parts, such as the additional flange (52) or the bar (82). Applicant further argues that the spring is not capable of being compressed. However, forces can try to move the members 42 and 44 together. While this would place an additional stress on members 50 and 60, the spring would still additionally compress. In addition, the claim as written recites that when a loading force is applied to said first opposed end pairs... compresses said apparatus. The claim does not recite that this must happen from the rest position to the transitional position. The spring would be compressing when moving from said transitional positional to said resting position. Regarding applicant's arguments concerning Fyfe et al., applicant argues that the first fixed portion abutting surface is not "in proximity of" the second movable portion. However, the phrase "in proximity of" is read broadly. While the term requires closeness, it does not require that the parts be touching. Second, it is noted that the figures are not drawn to scale. Regarding the rod (7), this member works in combination with disks (13) in order to adjust the level of tension. Applicant then argues that plate 9 cannot move left, but that is assuming that plate 9 was started in the leftmost position. It is further noted that the requirements



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following the "wherein" clause in claim 1 are all capability statements. These statements do not specify if the must occur from the resting or transitional state, just that they at some point must be capable of happening. With regards to end (11) and (5), see the comments on proximity above. With regards to applicant's arguments concerning Sridhara, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Here, Sridhara is a "buckling restrained brace". Not only is the brace capability of being mounted to a structure, it would have been obvious to use the brace by mounting it. Here, the brace, and hence the sleeve, could be mounted via ends 53. Applicant additionally argues that there could be other embodiments without springs. However, springs are still disclosed in a separate embodiment. The springs also function to assist in mounting the parts together. The claim does not recite that the parts must be mounted together solely by a spring. With regards to the proximity argument, please see above.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH A. PLUMMER whose telephone number is (571)272-2246. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eileen Lillis/  
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/E. A. P./

Examiner, Art Unit 3635